

FRASER'S DOLPHIN (*Lagenodelphis hosei*): Western North Atlantic Stock

STOCK DEFINITION AND GEOGRAPHIC RANGE

Fraser's dolphins are distributed worldwide in tropical waters (Perrin *et al.* 1994) and are assumed to be part of the cetacean fauna of the tropical western North Atlantic. The paucity of sightings is probably due to naturally low abundance compared to other cetacean species. Sightings in the more extensively surveyed northern Gulf of Mexico are uncommon but occur on a regular basis. Fraser's dolphins have been observed in oceanic waters (>200 m) in the northern Gulf of Mexico during all seasons (Leatherwood *et al.* 1993; Hansen *et al.* 1996; Mullin and Hoggard 2000; Mullin and Fulling 2004). The western North Atlantic population is provisionally being considered a separate stock for management purposes, although there is currently no information to differentiate this stock from the northern Gulf of Mexico stock(s). Additional morphological, genetic and/or behavioral data are needed to provide further information on stock delineation.

POPULATION SIZE

The numbers of Fraser's dolphins off the U.S. or Canadian Atlantic coast are unknown, and seasonal abundance estimates are not available for this stock, since it was rarely seen in any surveys. A group of an estimated 250 Fraser's dolphins was sighted in waters 3300 m deep in the western North Atlantic off Cape Hatteras during a 1999 vessel survey (Figure 1; NMFS 1999). Abundance has not been estimated from the 1999 vessel survey in western North Atlantic because the sighting was not made during line-transect sampling effort; therefore, the population size of Fraser's dolphins is unknown. No Fraser's dolphins have been observed in any other surveys.

Minimum Population Estimate

Present data are insufficient to calculate a minimum population estimate for this stock.

Current Population Trend

There are insufficient data to determine the population trends for this stock.

CURRENT AND MAXIMUM NET PRODUCTIVITY RATES

Current and maximum net productivity rates are unknown for this stock. For purposes of this assessment, the maximum net productivity rate was assumed to be 0.04. This value is based on theoretical modeling showing that cetacean populations may not grow at rates much greater than 4% given the constraints of their reproductive history (Barlow *et al.* 1995).

POTENTIAL BIOLOGICAL REMOVAL

Potential Biological Removal level (PBR) is the product of the minimum population size, one-half the maximum productivity rate, and a recovery factor (MMPA Sec. 3.16 U.S.C. 1362; Wade and Angliss 1997). The minimum population size is unknown. The maximum productivity rate is 0.04, the default value for cetaceans. The "recovery" factor, which accounts for endangered, depleted, threatened stocks, or stocks of unknown status relative to optimum sustainable population (OSP), is assumed to be 0.5 because this stock is of unknown status. PBR for the western North Atlantic Fraser's dolphin stock is unknown because the minimum population size is unknown.

ANNUAL HUMAN-CAUSED MORTALITY AND SERIOUS INJURY

Fishery Information

Detailed fishery information is reported in Appendix III. Total annual estimated average fishery-related

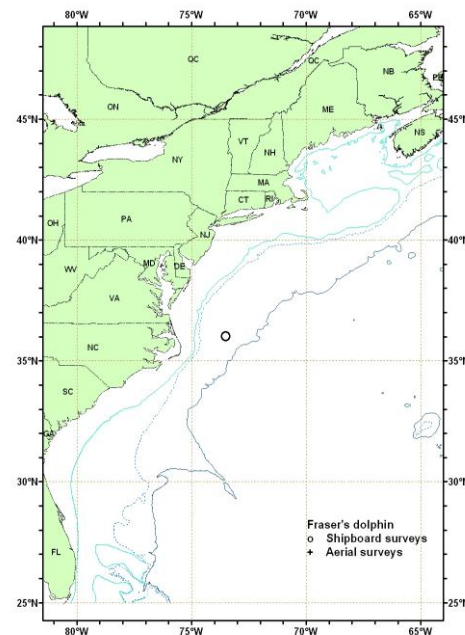


Figure 1. Distribution of Fraser's dolphins from SEFSC shipboard survey during 1999. Isobaths are at 100 m, 1,000 m, and 4,000 m.

mortality and serious injury to this stock during 2001-2005 was zero, as there were no reports of mortality or serious injury to Fraser's dolphins.

Other Mortality

From 2001-2005, 12 Fraser's dolphins were reported stranded between Maine and Puerto Rico (Table 1). The total includes one animal stranded in 2002, 10 mass stranded live animals in April 2003 in Lee, Florida, and one animal stranded in Florida in 2004. Prior to this time period, one animal stranded in Puerto Rico in 1999. There were no indications of fishery or human interactions for these stranded animals.

Stranding data probably underestimate the extent of fishery-related mortality and serious injury because all of the marine mammals that die or are seriously injured may not wash ashore, nor will all of those that do wash ashore necessarily show signs of entanglement or other fishery-interaction. Finally, the level of technical expertise among stranding network personnel varies widely as does the ability to recognize signs of fishery interaction.

| Table 1. Fraser's dolphin (<i>Lagenodelphis hosei</i>) reported strandings along the U.S. Atlantic coast, 2001-2005. | | | | | | |
|--|------|------|-----------------|------|------|--------|
| STATE | 2001 | 2002 | 2003 | 2004 | 2005 | TOTALS |
| Florida | 0 | 0 | 10 ^a | 1 | 0 | 11 |
| Puerto Rico | 0 | 1 | 0 | 0 | 0 | 1 |
| TOTALS | 0 | 1 | 10 | 1 | 0 | 12 |

^a Florida live mass stranding of 10 animals in Lee, Florida on April 4, 2003

STATUS OF STOCK

The status of Fraser's dolphins relative to OSP in the U.S. western North Atlantic EEZ is unknown. The species is not listed as threatened or endangered under the Endangered Species Act. There are insufficient data to determine the population size or trends and PBR cannot be calculated for this stock. No fishery-related mortality and serious injury has been observed since 1999; therefore, total U.S. fishery-related mortality and serious injury rate can be considered insignificant and approaching zero mortality and serious injury. This is not a strategic stock.

REFERENCES CITED

- Barlow, J., S. L. Swartz, T. C. Eagle and P. R. Wade. 1995. U.S. Marine mammal stock assessments: Guidelines for preparation, background, and a summary of the 1995 assessments. NOAA Tech. Memo. NMFS-OPR-6, 73pp. Available from NMFS, Southwest Fisheries Science Center, 8604 La Jolla Shores Drive, La Jolla, CA, 92037-1508.
- Hansen, L. J., K. D. Mullin, T. A. Jefferson and G. P. Scott. 1996. Visual surveys aboard ships and aircraft. pp. 55-132. In: R.W. Davis and G.S. Fargion (eds.), Distribution and abundance of marine mammals in the north-central and western Gulf of Mexico: Final report. Volume II: Technical report. OCS Study MMS 96-0027. Minerals Management Service, Gulf of Mexico OCS Region, New Orleans.
- Leatherwood, S., T. A. Jefferson, J. C. Norris, W. E. Stevens, L. J. Hansen and K. D. Mullin. 1993. Occurrence and sounds of Fraser's dolphin in the Gulf of Mexico. Texas J. Sci. 45(4):349-354.
- Mullin, K. D. and W. Hoggard. 2000. Visual surveys of cetaceans and sea turtles from aircraft and ships. Pages 111-172. In R.W. Davis, W.E. Evans, and B. Würsig (eds.), Cetaceans, sea turtles and seabirds in the northern Gulf of Mexico: Distribution, abundance and habitat associations. Volume II: Technical report. OCS Study MMS 96-0027. Minerals Management Service, Gulf of Mexico OCS Region, New Orleans.
- Mullin, K. D. and G. L. Fulling. 2004. Abundance of cetaceans in the oceanic northern Gulf of Mexico, 1996-2001. Mar. Mamm. Sci. 20(4):787-807.
- NMFS [National Marine Fisheries Service]. 1999. Cruise results. Summer Atlantic Ocean marine mammal survey. NOAA Ship Oregon II cruise 236 (99-05), 4 August - 30 September 1999. Available from SEFSC, 3209 Frederic Street, Pascagoula, MS 39567.
- Perrin, W. F., S. Leatherwood and A. Collet. 1994. Fraser's dolphin *Lagenodelphis hosei* (Fraser 1956). pp. 225-240. In: S. H. Ridgway and R. Harrison (editors) Handbook of marine mammals, Vol. 5: The first book of dolphins. Academic Press, London, 416 pp.
- Wade, P.R., and R.P. Angliss. 1997. Guidelines for assessing marine mammal stocks: Report of the GAMMS Workshop April 3-5, 1996, Seattle, Washington. NOAA Tech. Memo. NMFS-OPR-12, 93 pp.